

mined that the term "plate" was amended during prosecution by describing it as "having a length," but that that amendment did not narrow the scope of the claim because "all physical objects have [*8] a length." *Primos v. Hunter's Specialties*, No. C01-004MJM (N.D. Iowa Mar. 12, 2004) ("Prosecution History Estoppel Order"). The court also observed that the term "plate" was amended to require that it be "differentially spaced" above the membrane, which narrowed the scope of the claim. *Id.* According to the court, the subject matter surrendered by that amendment involved "objects that are not differentially spaced above the membrane." Because the Tone Trough contained a dome that was spaced above the membrane and therefore arguably did not fall within that surrendered area, the court denied summary judgment of no infringement under the doctrine of equivalents as to the '578 patent. Finally, before trial, Primos filed a motion requesting that a device known as the Aluminum Flap Call not be introduced as evidence during trial. The court granted that motion, and noted in its order that, throughout discovery, Hunter's Specialties never identified the Aluminum Flap Call as invalidating prior art. *Primos v. Hunter's Specialties*, No. C01-004 MJM (N.D. Iowa Mar. 12, 2004) ("Aluminum Flap Call Order"). Hunter's Specialties had sought to introduce the Aluminum Flap Call device [*9] when it claimed it had found the device, which was approximately three months prior to trial and several months after discovery had closed. However, Hunter's Specialties failed to offer any explanation why it could not locate the Aluminum Flap Call during discovery. In light of those circumstances, the court determined that allowing the Aluminum Flap Call to be introduced as evidence during trial would result in unfair surprise to Primos, and thus the court granted Primos's motion to exclude the Aluminum Flap Call as evidence. A jury trial commenced on March 15, 2004. In the jury instructions concerning inducement of infringement against individual defendants Wayne Carlton and David Forbes, the court instructed the jury that it could consider several factors and stated that "the assertion of the attorney-client privilege with respect to a non-infringement opinion may support an inference that the withheld advice of counsel was adverse to that party." As for willful infringement against Hunter's Specialties, the court did not instruct the jury as to an adverse inference but rather stated that the jury must consider the "totality of the circumstances." After a three-and-a-half week [*10] trial, the jury found that Hunter's Specialties' Tone Trough device literally infringed the '567 patent, and infringed the '578 patent under the doctrine of equivalents. The jury also found that Hunter's Specialties willfully infringed the '567 patent and that David Forbes and Wayne Carlton induced infringement of that patent. Hunter's Specialties and Wayne Carlton moved for judgment as a matter of

law ("JMOL"), arguing that the court improperly construed the term "engaging" in claim 21 of the '567 patent and that the "all limitations rule" and prosecution history estoppel barred the application of the doctrine of equivalents as to the '578 patent. Those defendants also moved for a new trial, arguing that the court erred in excluding the Aluminum Flap Call as evidence, and that the court's adverse-inference instruction resulted in prejudicial error. The court denied the motion for JMOL and the motion for a new trial. *Primos v. Hunter's Specialties*, No. C01-004 (N.D. Iowa Mar. 31, 2005). ("Post-Trial Order"). In its decision, the court first reaffirmed its construction of the claim term "engaging" in claim 21 of the '567 patent, noting that it had addressed the same issue in [*11] previous decisions. The court next determined that the "all limitations rule" did not preclude the application of the doctrine of equivalents for the '578 patent, reasoning that the only disputed term was "plate" in claim 2, and that determining that a dome was equivalent to a plate did not vitiate that claim limitation. The court also held that prosecution history estoppel did not prevent the application of the doctrine of equivalents as to the '578 patent because the Tone Trough did not fall within the area surrendered during prosecution. In addition, the court denied Hunter's Specialties's motion for a new trial, reaffirming its prior decision that the Aluminum Flap Call device could not be introduced as invalidating prior art because it was produced after the period for discovery had closed. Although the court determined that its "adverse inference" instruction to the jury was not in error, the court later vacated judgment against Wayne Carlton, the only defendant who had asserted the attorney-client privilege, in light of our decision in *Knorr-Bremse Systeme Fuer Nutzfahrzeuge GMBH v. Dana Corp.*, 383 F.3d 1337 (Fed. Cir. 2004) (en banc). Hunter's Specialties [*12] timely appealed to this court, and we have jurisdiction pursuant to 28 U.S.C. § 1295(a)(1). DISCUSSION We review a district court's denial of a motion for JMOL de novo by reapplying the JMOL standard. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 975 (Fed. Cir. 1995) (en banc). We also review the legal standards that the jury applied in reaching its verdict to determine whether they were correct as a matter of law. *Id.* at 975. JMOL is appropriate when "there is no legally sufficient evidentiary basis for a reasonable jury to find for that party on that issue." *Fed. R. Civ. P. 50(a)(1)*. The denial of a motion for a new trial is an issue not unique to patent law; thus, we apply the law of the regional circuit in which the district court sits—in this case, the Eighth Circuit. In the Eighth Circuit, the decision to deny a motion for a new trial is reviewed under an abuse of discretion standard. *Blair v. Wills*, 420 F.3d 823, 829 (8th Cir. 2005). I. Claim Construction The question of literal infringement of claim 21 of the '567 patent turns entirely on the [*13] district court's construction of the

term "engaging." Claim construction is a question of law reviewed de novo. *Cybor Corp. v. FAS Techs., Inc.* 138 F.3d 1448, 1454-56 (Fed. Cir. 1998) (en banc). Hunter's Specialties argues that the court erred in construing the term "engaging" in the phrase "second roof-of-mouth engaging yieldable sealing portion" to mean "to come into contact with." According to Hunter's Specialties, the proper construction of the term "engaging" is "sealing" or "interlocking." As support for its construction, Hunter's Specialties notes that claim 21 uses the word "engaging" to describe a seal created between the edge of the frame and the roof of the user's mouth. Also, Hunter's Specialties observes that the specification describes the edge as "sealing" against the roof of a mouth. In addition, Hunter's Specialties finds support for its construction in a dictionary definition that describes "engaging" as "to come together and interlock." Hunter's Specialties points out that this definition is consistent with the way the term is used throughout the patent. Primos responds that the district court correctly construed "engaging" as "to come into contact [*14] with." According to Primos, the intrinsic evidence does not support the selective dictionary definition put forth by Hunter's Specialties. In particular, the claims use both terms, "engaging" and "sealing," and thus each term is presumed to have a distinct meaning. Also, Primos asserts that to construe "engaging" as "sealing" or "interlocking" would exclude a preferred embodiment of the patent because the figures in the patent show the membrane as not interlocking with the roof of a mouth. In addition, Primos observes that while "interlocking" might be an appropriate construction of "engaging" for an invention relating to mechanical machinery with gears, it is not appropriate in the context of diaphragm mouth calls. We agree with Primos that the district court correctly construed the term "engaging" to mean "to come into contact with." As this court explained in *Phillips v. AWH Corp.*, we ordinarily construe claim terms to have their customary meaning as understood by a person of ordinary skill in the art. 415 F.3d 1303, 1312-17 (Fed. Cir. 2005) (en banc). In ascertaining the ordinary and customary meaning of a claim term, a court's primary focus should be on the intrinsic [*15] evidence of record, viz., the claims, the specification, and, if in evidence, the prosecution history. Id. Starting with the language of claim 21, the terms "engaging" and "sealing" are both expressly recited in the claim and therefore "engaging" cannot mean the same thing as "sealing"; if it did, one of the terms would be superfluous. Turning to the specification, although the word "engaging" is not expressly mentioned in the specification, figures 1 and 3 aid our understanding of that term. Figure 3, as depicted below, shows a call device positioned in a user's mouth.

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As shown in the figure above, there are several points of contact between the roof of a user's mouth (the top striped structure in the figure above) and the diaphragm mouth call—one such point is with the plate 24 and another is with the peripheral edge of the frame 12. That figure shows the plate touching the roof of the mouth, but does not reveal an interlocking relationship because there is no depicted means from which the frame can "interlock" with the roof of a user's mouth. The figure therefore supports a construction of "engaging" as to "come [*16] into contact with," while discouraging a construction of "interlocking." While we are mindful that we cannot import limitations from the preferred embodiments into the claim, we also should not normally interpret a claim term to exclude a preferred embodiment. See *Burke, Inc. v. Bruno Indep. Living Aids, Inc.*, 183 F.3d 1334, 1341 (Fed. Cir. 1999). Interpreting "engaging" to mean "interlocking" would exclude the embodiment shown in the figure and is not consistent with the rest of the specification which does not suggest an interlocking relationship between the roof of a mouth and the mouth call. n2 We therefore agree that the district court's construction of the term "engaging" to mean "to come into contact with" is supported by the intrinsic record and is correct.

n2 We do not discuss the prosecution history here because it is not relevant to the construction of the term "engaging."

II. Doctrine of Equivalents Hunter's Specialties challenges the application of the doctrine of equivalents on the ground that prosecution history estoppel applies to the term "plate." Hunter's Specialties specifically asserts that amendments to the term "plate" [*17] narrowed the scope of the claim and were made for reasons relating to patentability. According to Hunter's Specialties, prosecution history estoppel therefore barred the doctrine of equivalents for that claim term. Primos responds that the district court properly applied the doctrine of equivalents. It reasons that the *first amendment* made to the term "plate"—that it include a "length"—did not narrow the scope of the claim. As to the *second amendment* made to the term "plate"—that it be "differentially spaced" above the membrane—that amendment bears no more than a tangential relationship to the accused Tone Trough. In particular, Primos contends that the territory surrendered by that amendment consists of objects that are not differentially spaced above the membrane. Because the accused device's "dome" is differentially spaced above the membrane, Primos asserts that the "differentially spaced" amendment does not pertain to the disputed element in the accused device and it is therefore merely tangential to the accused device. According to Primos, prosecution history estoppel thus does not apply to prevent the appli-

cation of the doctrine of equivalents here. We agree with Primos [*18] that the district court correctly determined that prosecution history estoppel does not apply here to preclude the application of the doctrine of equivalents. As the Supreme Court explained in *Festo*, when a patent claim is amended during prosecution for reasons relating to patentability, there is a presumption that the patentee surrendered all the territory between the original claim limitation and the amended claim limitation. 535 U.S. 722, at 740, 122 S. Ct. 1831, 152 L. Ed. 2d 944. There are situations, however, in which a patentee may overcome that presumption. *Id.* One such situation is when the "rationale underlying the amendment may bear no more than a tangential relation to the equivalent in question." *Id.* at 740-41. The term "plate" in claim 2 of the '578 patent was amended in two ways: (1) by requiring that it have a "length" and (2) by adding the limitation that the plate be "differentially spaced" above the membrane. The district court correctly recognized that the addition of the term "length" did not narrow the scope of the claim because every physical object has a length. The district court also determined that adding the limitation that the plate be "differentially spaced" [*19] above the membrane did narrow the scope of the claim, and the court assumed that the reason for the amendment was a substantial one relating to patentability. We agree with the district court, however, that the territory surrendered by the "differentially spaced" amendment comprises plates that are not differentially spaced above the membrane. That conclusion is consistent with the prosecution history. The patentee added the "differentially spaced" limitation to distinguish the diaphragm mouth call from a prior art device that consisted of a shelf-like structure positioned on top of the membrane without any spacing. The accused device, however, includes a dome that is spaced above the membrane. Because the accused device's dome includes the spacing, the amendment was merely tangential to the contested element in the accused device, and thus prosecution history estoppel does not apply to prevent the application of the doctrine of equivalents. Hunter's Specialties also argues that the court should not have allowed the application of the doctrine of equivalents because, by doing so, the claim limitation "plate" in claim 2 of the '578 patent was vitiated. According to Hunter's Specialties, [*20] the court's construction of the term "plate" requires a specific structure "of relatively uniform thickness and flatness which may also have some moderate curvature to it. Hunter's Specialties asserts that allowing a "dome" to be considered an equivalent to a "plate" would eliminate that limitation from the claim. Primos responds that the "all limitations rule" is not applicable to the circumstances in this case. According to Primos, the term "plate" does not convey a definitive, geometric shape or structure, and thus that claim limitation was not vitiated. Primos asserts

that the district court properly allowed the jury to consider whether a "dome" was equivalent to a "plate" and that in doing so, no claim limitation was eliminated. We agree with Primos that the application of the doctrine of equivalents was not improper in this case. Under the doctrine of equivalents, "a product or process that does not literally infringe upon [sic] the express terms of a patent claim may nonetheless be found to infringe if there is 'equivalence' between the elements of the accused product or process and the claimed elements [sic] of the patented invention." *Warner-Jenkinson Co., Inc. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 21, 117 S. Ct. 1040, 137 L. Ed. 2d 146 (1997) [*21] (citation omitted). The "all limitations rule" restricts the doctrine of equivalents by preventing its application when doing so would vitiate a claim limitation. *Warner-Jenkinson*, 520 U.S. at 29 (stating that the doctrine of equivalents cannot be applied broadly so as to "effectively eliminate that [claim] element in its entirety"); *Lockheed Martin Corp.*, 324 F.3d 1308, at 1321 ("[I]f a court determines that a finding of infringement under the doctrine of equivalents 'would entirely vitiate a particular claim element,' then the court should rule that there is no infringement under the doctrine of equivalents." (citation omitted)). On appeal, Hunter's Specialties argues that we should reverse the jury's finding of equivalence because the substitution of the accused dome for the claimed "plate" would vitiate the "plate" limitation and thereby violate the all limitations rule. As the district court recognized, Hunter's Specialties is essentially contending that there can be no equivalent to the claimed "plate." Our precedent has recognized that "[t]here is no set formula for determining whether a finding of equivalence would vitiate a claim limitation, [*22] and thereby violate the all limitations rule. Rather, courts must consider the totality of the circumstances of each case and determine whether the alleged equivalent can be fairly characterized as an insubstantial change from the claimed subject matter without rendering the pertinent limitation meaningless." *Freedman Seating Co. v. Am. Seating Co.*, 420 F.3d 1350, 1359 (Fed. Cir. 2005) (citations omitted). Thus, because Primos's theory of equivalence (i.e., that a dome is equivalent to the claimed "plate") does not "effectively eliminate ... [the 'plate' limitation] in its entirety," it does not violate the all limitations rule. Noting that Hunter's Specialties has not challenged whether the jury's finding is supported by substantial evidence, we affirm the jury's finding that the accused dome is equivalent to the claimed "plate." III. Exclusion of Evidence Hunter's Specialties next argues that the district court abused its discretion in excluding a prior art device, the Aluminum Flap Call, from evidence because admitting it would have resulted in prejudicial surprise. According to Hunter's Specialties, even though the device itself was not located until [*23] shortly before trial began, Primos was aware of it as being poten-

tial prior art throughout discovery. For example, Hunter's Specialties asserts that defendant Wayne Carlton was extensively questioned by Primos on the Aluminum Flap Call device. Hunter's Specialties also asserts that Primos waited until shortly before the commencement of trial to claim prejudicial surprise, even though it knew about the device much earlier. In addition, Hunter's Specialties argues that there is a strong public policy in favor of allowing the Aluminum Flap Call as evidence because the public interest requires consideration of any invalidating prior art device. Primos responds that the district court properly excluded the Aluminum Flap Call because Hunter's Specialties never identified that device as potentially invalidating prior art during discovery. In addition, Primos asserts that the defendants did not provide an explanation as to why they could not locate that device during discovery. According to Primos, to permit the Aluminum Flap Call to be introduced as evidence during trial, after years of discovery during which that device was not identified, would result in prejudicial surprise. Also, although [*24] the Aluminum Flap Call may have been mentioned during discovery, its origin could not be authenticated, and the testimony revealed that the prototypes were experimental in nature. Thus, there was no reason for Primos to believe that the Aluminum Flap Call was prior art and would be introduced as evidence. We agree with Primos that the district court did not abuse its discretion in excluding the Aluminum Flap Call from evidence. The record reflects that the Aluminum Flap Call was not located until after discovery had closed. Moreover, although the Aluminum Flap Call may have been mentioned during discovery, it was never identified to the court as an invalidating prior art device. The district court prevented Hunter's Specialties from introducing the Aluminum Flap Call into evidence because it "did not demonstrate diligence in attempting to locate the call during discovery" and because during discovery Hunter's Specialties did not assert that it was claiming the Aluminum Flap Call as invalidating prior art. That determination was not an abuse of discretion. It was well within the district court's province to determine that because the Aluminum Flap Call was not identified as potential [*25] prior art until after discovery had closed and shortly before trial commenced, it would then be unfair to permit its introduction into evidence. We reject Hunter's Specialties' argument that policy concerns should override the district court's decision to exclude the Aluminum Flap Call as evidence. First, and most importantly, the court never determined whether the Aluminum Flap Call was in fact invalidating prior art, and the parties dispute whether the device was in public use—it was asserted that its use was experimental and occurred only in Canada. Thus, the Aluminum Flap Call may in fact not have been invalidating prior art at all. Second, as the district court pointed out, the purpose of discovery is to enable par-

ties to obtain the factual information needed to prepare their cases for trial. The district court must therefore consider the "unfair and prejudicial surprise" to a party that may result from allowing evidence to be presented during trial. See *ATD Corp. v. Lydall, Inc.*, 159 F.3d 534, 551 (Fed. Cir. 1998) (stating that the purpose of both the Federal Rules of Civil Procedure and 35 U.S.C. § 282 is to prevent unfair and prejudicial [*26] surprise and not to permit last-minute production of evidence). The district court determined that Hunter's Specialties had ample opportunity to introduce the Aluminum Flap Call during the two and a half year discovery phase. Because it did not do so, the district court was entitled to decide that Hunter's Specialties may not then introduce disputed evidence beyond the time allotted for discovery. IV. Adverse-Inference Jury Instruction Finally, Hunter's Specialties asserts that under *Knorr-Bremse*, 383 F.3d at 1337, the district court erred in instructing the jury that it could draw an adverse-inference from an opinion withheld due to the assertion of the attorney-client privilege. Although Hunter's Specialties recognizes that the only defendant to assert the attorney-client privilege was Wayne Carlton, it argues that the adverse-inference jury instruction prejudiced all defendants because the infringement claim involved all defendants and was tried to one jury. Primos responds that the court vacated the judgment against Wayne Carlton, the only individual who asserted the attorney-client privilege and therefore the only person who was potentially prejudiced by [*27] the jury instruction. Primos points out that Hunter's Specialties waived the attorney-client privilege and thus was not affected by the adverse jury instruction. In addition, Primos contends that Hunter's Specialties did not present any evidence on how it was prejudiced by the jury's instruction. We agree with Primos that the jury instruction did not prejudice Hunter's Specialties. A party seeking to alter a judgment based on erroneous jury instructions must establish that "those instructions were legally erroneous," and that "the errors had prejudicial effect." *Advanced Display Sys., Inc. v. Kent State Univ.*, 212 F.3d 1272, 1281 (Fed. Cir. 2000). Legal error in an erroneous jury instruction is prejudicial when it is "inconsistent with substantial justice." *Fed. R. Civ. P. 61*. The jury's instruction for inducement of infringement against individual defendants David Forbes and Wayne Carlton provided that "the assertion of the attorney-client privilege with respect to a non-infringement opinion may support an inference that the withheld advice of counsel was adverse to that party." That jury instruction thus permitted an adverse [*28] inference to be drawn against the party that asserted the attorney-client privilege. The only individual who asserted the attorney-client privilege, however, was Wayne Carlton, and the court vacated the judgment of inducement of infringement against him. The only individual therefore po-

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tentially prejudiced by the adverse-inference instruction was Wayne Carlton, not Hunter's Specialties. In addition, in the jury's instruction as to willful infringement against individual defendant Hunter's Specialties, the express adverse inference language was absent. Rather, the instruction stated that the jury must consider the totality of the circumstances and may rely on a number of factors to support a finding of willfulness. There was therefore no adverse-inference instruction as to willfulness against Hunter's Specialties. Thus, we conclude that the jury's instruction was not legally erroneous and did not result in prejudicial error against either individual defendants Hunter's Specialties or David Forbes. We have considered Hunter's Specialties other arguments and find them to be unpersuasive. CONCLUSION Because the court prop-

erly construed the term "engaging," we affirm the court's judgment [*29] of literal infringement. Because the claim term "plate" is a structure that was not vitiated by substitution of a dome, we affirm the court's conclusion that applying the doctrine of equivalents was not improper. Also, because the amendment was merely tangential to the contested element in the accused device, we affirm the court's determination that prosecution history estoppel did not preclude the application of the doctrine of equivalents. Finally, because the court did not abuse its discretion in excluding the Aluminum Flap Call as evidence and because its adverse-inference instruction did not constitute prejudicial error, we affirm the court's decision denying a new trial. AFFIRMED.